CLAIMS:

1. A system for cooling a live well, said apparatus comprising:

a cooling chamber;

a pump connected in fluid communication between said cooling chamber and said live well for circulating water between said cooling chamber and said live well; and

at least one thermoelectric cooler positioned in a heat exchange relationship with said cooling chamber for removing heat from said cooling chamber and from water circulating in said cooling chamber.

2. The system of Claim 1, further comprising an air inlet in said pump for permitting ambient air to enter and aerate said water.

3. The system of Claim 1, further comprising at least one fan positioned in a heat exchange relationship with said at least one thermoelectric cooler for transferring heat away from said at least one thermoelectric cooler to ambient air.

4. The system of Claim 1, further comprising at least one fin positioned in a heat exchange relationship with said at least one thermoelectric cooler for transferring heat away from said at least one thermoelectric cooler to ambient air.

5. The system of Claim 1, further comprising at least one fan and at least one fin positioned in a heat exchange relationship with said at least one thermoelectric cooler for transferring heat away from said at least one thermoelectric cooler to ambient air.

6. The system of Claim 1, further comprising:

a temperature sensor positioned for sensing the temperature of water in said live well and for generating a temperature signal indicative of said temperature; and

a controller connected to said temperature sensor for receiving said temperature signal, said controller being further connected to said pump and said at least one thermoelectric cooler for controlling operation of said pump and said at least one thermoelectric cooler, said controller being configured for activating said pump and said at least one thermoelectric cooler when said temperature signal indicates that the temperature of said water in said live well is above a predetermined upper temperature, and for deactivating said pump and said at least one thermoelectric cooler when said temperature signal indicates that the temperature of said water in said live well is below a predetermined lower temperature.

7. The system of Claim 1, further comprising:

a temperature sensor positioned for sensing the temperature of water in said live well and for generating a temperature signal indicative of said temperature; and

a controller connected to said temperature sensor for receiving said temperature signal, said controller being further connected to said pump and said at least

one thermoelectric cooler for controlling operation of said pump and said at least one thermoelectric cooler, said controller being configured for activating said at least one thermoelectric cooler when said temperature signal indicates that the temperature of said water in said live well is above a predetermined upper temperature, for activating said pump a predetermined period of time subsequent to activation of said at least one thermoelectric cooler, and for deactivating said pump and said at least one thermoelectric cooler when said temperature signal indicates that the temperature of said water in said live well is below a predetermined lower temperature.

8. The system of Claim 1, wherein said cooling chamber further comprises an inlet port for receiving water from said live well, and an outlet port for passing water back to said live well, said apparatus further comprising:

a warm water line coupled between said pump and said inlet port for providing fluid communication between said pump and said inlet port;

a cool water line coupled between said outlet port and said live well for providing fluid communication between said outlet port and said live well;

a bypass line coupled between said warm water line and said cool water line for facilitating fluid communication of water between said warm water line and said cool water line, so that said water bypasses said cooling chamber; and

a valve positioned on said bypass line for controlling the flow of water through said bypass line.

9. The system of Claim 1, wherein said first passageway further comprises an inlet port for receiving water from said live well, and an outlet port for passing water back to said live well, said apparatus further comprising:

a warm water line coupled between said pump and said inlet port for providing fluid communication between said pump and said inlet port;

a cool water line coupled between said outlet port and said live well for providing fluid communication between said outlet port and said live well;

a bypass line coupled between said warm water line and said cool water line for facilitating fluid communication of water between said warm water line and said cool water line, so that said water bypasses said cooling chamber; and

a three-way valve positioned between said bypass line and said warm water line for controlling the proportion of water that flows through said bypass line and through said warm water line between said bypass valve and said inlet port.

10. The system of Claim 1, wherein said live well further comprises an outlet port through which water is drawn, and an inlet port through which water is received; wherein said cooling chamber further comprises an inlet port coupled to said outlet port of said live well for receiving water from said live well, and an outlet port coupled to said inlet port of said live well for transmitting water to said live well; wherein a top of water level is defined in said live well; and wherein said inlet port of said live well is positioned above said top of water level for facilitating aeration of said water.

11. The system of Claim 1, wherein said pump is a first pump, and said system further comprises:

a water jacket positioned in a heat exchange relationship with said at least one thermoelectric cooler for receiving heat from said at least one thermoelectric cooler; and

a second pump connected in fluid communication between said water jacket and a body of water for circulating water between said water jacket and said body of water.

12. The system of Claim 1, wherein said pump is a first pump, and said system further comprises:

a water jacket positioned in a heat exchange relationship with said at least one thermoelectric cooler for receiving heat from said at least one thermoelectric cooler;

a second pump connected in fluid communication between said water jacket and a body of water for

circulating water between said water jacket and said body of water; and

at least one fan positioned in a heat exchange relationship with said water jacket for transferring heat away from said water jacket to ambient air.

13. The system of Claim 1, wherein said pump is a first pump, and said system further comprises:

a water jacket positioned in a heat exchange relationship with said at least one thermoelectric cooler for receiving heat from said at least one thermoelectric cooler;

a second pump connected in fluid communication between said water jacket and a body of water for circulating water between said water jacket and said body of water; and

at least one fin positioned in a heat exchange relationship with said water jacket for transferring heat away from said water jacket to ambient air.

14. The system of Claim 1, wherein said pump is a first pump, and said system further comprises:

a water jacket positioned in a heat exchange relationship with said at least one thermoelectric cooler for receiving heat from said at least one thermoelectric cooler;

a second pump connected in fluid communication between said water jacket and a body of water for circulating water between said water jacket and said body of water; and

at least one fan and at least one fin positioned in a heat exchange relationship with said water jacket for

transferring heat away from said water jacket to ambient air.

15. The system of Claim 1, wherein said pump is a first pump, and said system further comprises:

a water jacket positioned in a heat exchange relationship with said at least one thermoelectric cooler for receiving heat from said at least one thermoelectric cooler;

a second pump connected in fluid communication between said water jacket and a body of water for circulating water between said water jacket and said body of water;

a temperature sensor positioned for sensing the temperature of water in said live well and for generating a temperature signal indicative of said temperature; and

a controller connected to said temperature sensor for receiving said temperature signal, said controller being further connected to said first pump, said second pump, and said at least one thermoelectric cooler for controlling operation of said first pump, said second pump, and said at least one thermoelectric cooler, said controller being configured for activating said at least one thermoelectric cooler, said first pump, and said second pump, when said temperature signal indicates that the temperature of said water in said live well is above a predetermined upper temperature, and for deactivating said at least one thermoelectric cooler, said first pump, and said second pump, when said temperature signal indicates that the temperature of said water in said live well is below a predetermined lower temperature.

16. The system of Claim 1, wherein said pump is a first pump, and said system further comprises:

a water jacket positioned in a heat exchange relationship with said at least one thermoelectric cooler for receiving heat from said at least one thermoelectric cooler;

a second pump connected in fluid communication between said water jacket and a body of water for circulating water between said water jacket and said body of water;

a temperature sensor positioned for sensing the temperature of water in said live well and for generating a temperature signal indicative of said temperature; and

a controller connected to said temperature sensor for receiving said temperature signal, said controller being further connected to said first pump, said second pump, and said at least one thermoelectric cooler for controlling operation of said first pump, said second pump, and said at least one thermoelectric cooler, said controller being configured for activating said at least one thermoelectric cooler when said temperature signal indicates that the temperature of said water in said live well is above a predetermined upper temperature, for activating said first pump and said second pump a predetermined amount of time subsequent to activation of said at least one thermoelectric cooler, and for deactivating said at least one thermoelectric cooler, said first pump, and said second pump, when said temperature signal indicates that the temperature of said water in said live well is below a predetermined lower temperature.

17. A method for cooling a live well, said method comprising steps of:

circulating water between said live well and a cooling chamber; and

activating at least one thermoelectric cooler positioned in a heat exchange relationship with said cooling chamber for removing heat from said cooling chamber and from water circulating in said cooling chamber.

18. The method of Claim 17, further comprising the step of aerating said water with ambient air drawn through an air inlet in a pump utilized for circulating said water.

19. The method of Claim 17, further comprising the step of positioning at least one fan in a heat exchange relationship with said at least one thermoelectric cooler for transferring heat away from said at least one thermoelectric cooler to ambient air.

20. The method of Claim 17, further comprising the step of positioning at least one fin in a heat exchange relationship with said at least one thermoelectric cooler for transferring heat away from said at least one thermoelectric cooler to ambient air.

21. The method of Claim 17, further comprising the step of positioning at least one fan and at least one fin in a heat exchange relationship with said at least one thermoelectric cooler for transferring heat away from said at least one thermoelectric cooler to ambient air.

22. The method of Claim 17, further comprising steps of:

sensing the temperature of water in said live well and generating a temperature signal indicative of said temperature;

activating said at least one thermoelectric cooler and circulating said water when said temperature signal indicates that the temperature of said water in said live well is above a predetermined upper temperature; and

deactivating said at least one thermoelectric cooler and discontinuing said step of circulating said water when said temperature signal indicates that the temperature of said water in said live well falls below a predetermined lower temperature.

23. The method of Claim 17, further comprising steps of:

sensing the temperature of water in said live well and generating a temperature signal indicative of said temperature;

activating said at least one thermoelectric cooler when said temperature signal indicates that the temperature of said water in said live well is above a predetermined upper temperature;

circulating said water beginning at a predetermined amount of time subsequent to the step of activating said at least one thermoelectric cooler; and

deactivating said at least one thermoelectric cooler and discontinuing said step of circulating said water when said temperature signal indicates that the temperature of said water in said live well falls below a predetermined lower temperature.

24. The method of Claim 17, further comprising the step of directing at least a portion of said water to bypass said cooling chamber.

25. The method of Claim 17, wherein said step of circulating said water further comprises passing said water through ambient air to thereby aerate said water prior to re-entry by said water into said live well.

26. The method of Claim 17, further comprising steps of:

transferring heat from said at least one thermoelectric cooler to a water jacket positioned in a heat exchange relationship with said at least one thermoelectric cooler; and

circulating water between said water jacket and a body of water.

27. The method of Claim 17, further comprising steps of:

transferring heat from said at least one thermoelectric cooler to a water jacket positioned in a heat exchange relationship with said at least one thermoelectric cooler;

circulating water between said water jacket and a body of water; and

positioning at least one fan in a heat exchange relationship with said water jacket for transferring heat away from said water jacket to ambient air.

28. The method of Claim 17, further comprising steps of:

transferring heat from said at least one thermoelectric cooler to a water jacket positioned in a heat exchange relationship with said at least one thermoelectric cooler;

circulating water between said water jacket and a body of water; and

positioning at least one fin in a heat exchange relationship with said water jacket for transferring heat away from said water jacket to ambient air.

29. The method of Claim 17, further comprising steps of:

transferring heat from said at least one thermoelectric cooler to a water jacket positioned in a heat exchange relationship with said at least one thermoelectric cooler;

circulating water between said water jacket and a body of water; and

positioning at least one fan and at least one fin in a heat exchange relationship with said water jacket for transferring heat away from said water jacket to ambient air.

30. The method of Claim 17, further comprising steps of:

positioning a water jacket in a heat exchange relationship with said at least one thermoelectric cooler for transferring heat away from said at least one thermoelectric cooler to said water jacket;

sensing the temperature of water in said live well and generating a temperature signal indicative of said temperature;

activating said at least one thermoelectric cooler, circulating water between said live well and said cooling chamber, and circulating water between said water jacket and a body of water when said temperature signal indicates that the temperature of said water in said live well is above a predetermined upper temperature; and

deactivating said at least one thermoelectric cooler, and discontinuing said steps of circulating water between said live well and said cooling chamber, and circulating water between said water jacket and a body of water, when said temperature signal indicates that the temperature of said water in said live well falls below a predetermined lower temperature.

31. The method of Claim 17, further comprising steps of:

positioning a water jacket in a heat exchange relationship with said at least one thermoelectric cooler for transferring heat away from said at least one thermoelectric cooler to said water jacket;

sensing the temperature of water in said live well and generating a temperature signal indicative of said temperature;

activating said at least one thermoelectric cooler when said temperature signal indicates that the temperature of said water in said live well is above a predetermined upper temperature;

circulating water between said live well and said cooling chamber and circulating water between said water jacket and a body of water, beginning a predetermined period of time subsequent to activation of said at least one thermoelectric cooler; and

deactivating said at least one thermoelectric cooler, and discontinuing said steps of circulating water between said live well and said cooling chamber, and circulating water between said water jacket and a body of water, when said temperature signal indicates that the temperature of said water in said live well falls below a predetermined lower temperature.